

◆ A multi-period site at Eden Park (former Toddington Nurseries), Littlehampton, West Sussex

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Excavations on land formerly occupied by Toddington Nurseries, Littlehampton, revealed evidence for activity dating from the Mesolithic to the post-medieval period. Some residual Mesolithic and Neolithic flint was recovered, as well as a few sherds of Neolithic pottery. A possible Neolithic ditch was found during the evaluation, although this area was not subsequently excavated, so its form and significance are unclear. Middle and Late Bronze Age occupation comprised a hollow way, waterholes/wells and a possible roundhouse with associated spreads of domestic rubbish. Two Neolithic axes deposited in the terminal of a Bronze Age ditch may have been curated. Another deposit, apparently placed deliberately, consisted of a near-complete pot filled with burnt stones, a quern fragment and worked flint. Intensive cereal production during the Romano-British period is indicated by environmental remains recovered from a double-ditched field system and pits. It is suggested that the field system was part of a wider agricultural complex associated with the estate of the nearby Angmering Roman villa. Residual Early to Middle Saxon pottery was found although, as no features of this date were identified, its significance is uncertain. Some Saxo-Norman pottery (10–12th century date) was recovered but the bulk of the assemblage dates to the 13th–14th centuries, when a trackway was created and a field system established.

INTRODUCTION

The site, located to the north-east of Littlehampton town centre (centred on TQ 03520 03565; Fig. 1) was 9ha in extent, occupying a former nursery, allotments and fields. The underlying geology is brickearth with raised beach deposits, sands and gravels (British Geological Survey (BGS) 1996), to the west. The site is flat as a result of agricultural levelling and lies at a height of c. 5.25m aOD (above Ordnance Datum). Prior to evaluation a desk-based assessment (DBA) was undertaken by Archaeology South East (Bennell 2002); preliminary archaeological evaluation recognised the potential for Bronze Age, Iron Age and Roman remains to be high (Oxford Archaeological Unit (OAU) 2005).

The excavation strategy was based on the results of the DBA and evaluation, with seven areas targeted for detailed excavation, and further trial trenches positioned to answer specific questions (see below). Other areas were landscaped, thus preserving *in situ* the archaeological remains. This strategy was devised by CgMs (2005) and Wessex

Archaeology in consultation with John Mills and Mark Taylor (Archaeological Advisors to West Sussex County Council).

HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Mesolithic and Neolithic flint has been recovered from various sites along the A259, and Bronze Age material including an urned cremation burial and burnt mound was also found (Rudling and Gilkes 2000). Excavations approximately 1km to the east of the site, at the former Horticultural Research International (HRI), identified Bronze Age activity and evidence for Romano-British pottery production (Lovell 2002, 24). A 2nd century Roman watermill, Late Iron Age and early Romano-British features were discovered to the northwest and southeast of the site (Bennell 2002). Further evidence for Late Iron Age/early Romano-British occupation was identified during the construction of the A259 bypass (Rudling and Gilkes 2000).

Angmering Roman villa lies 2km north of the site (Scott 1938; Gilkes 1999) and Littlehampton

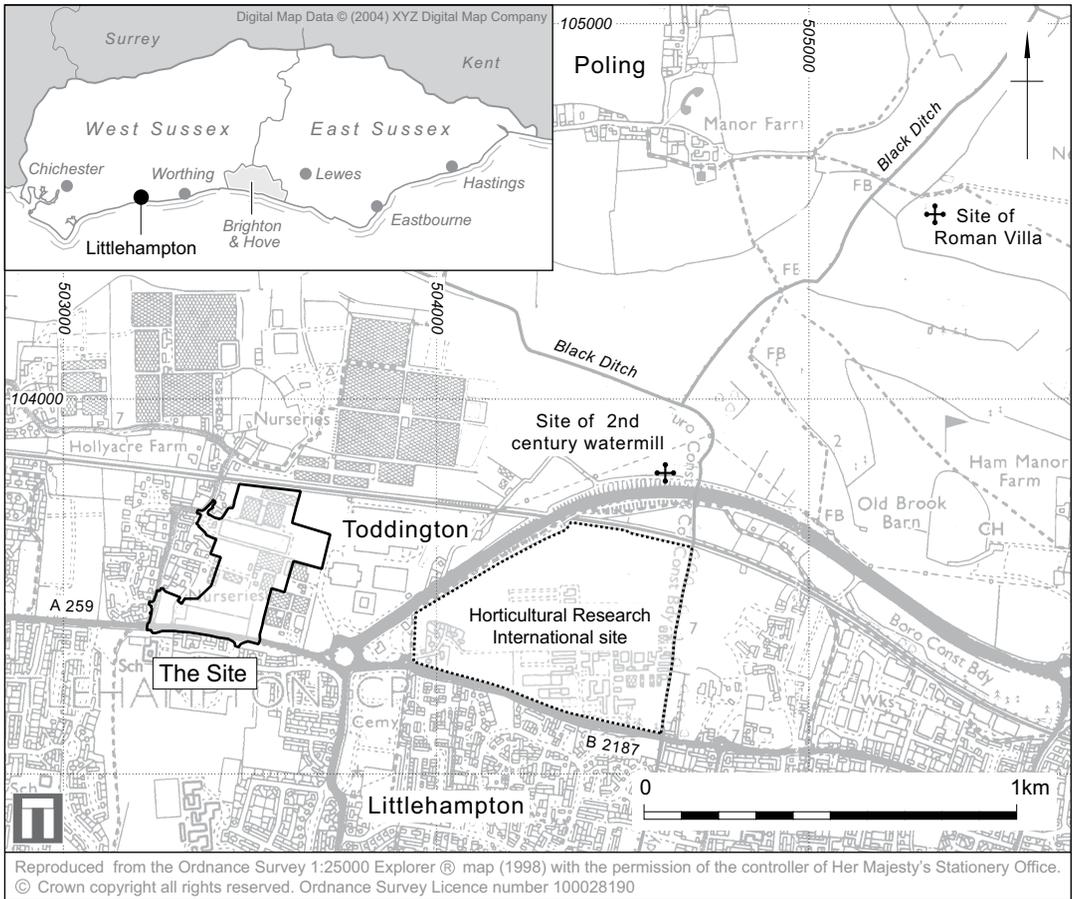


Fig. 1. Site location.

villa to the southeast. What remains of the Black Ditch, which may have been navigable during the Romano-British period, flows parallel to the northern edge of the site.

Toddington was recorded as Tott's tun in *Domesday*. St Nicholas church in east Angmering has Saxon origins (Bedwin 1975). In the vicinity of the site there are post-medieval brick fields, a windmill and a railway station. There are a number of listed buildings in Toddington dating from the 16th to the mid 19th centuries.

RESULTS

Following the evaluation (OAU 2005), seven areas (Areas A–E) and eight trial trenches (trenches 34–41) were excavated (totalling approximately 1.61ha) (Fig. 2). The natural brickearth was revealed at an average depth of 0.90m.

MESOLITHIC AND NEOLITHIC

Limited evidence for Mesolithic and Neolithic activity was identified during the evaluation, and consisted of a few blades and a possible Neolithic ditch (3405, north of Area A) from which some Early or Middle Neolithic pottery was recovered (OAU 2005). However, no further excavation took place in this area, so it is difficult to interpret this feature.

The excavation revealed limited to residual flint and few Early Neolithic sherds. Diagnostic flints included a fragmentary chisel, a Mesolithic or Neolithic axe, a leaf-shaped arrowhead, a flake from a polished implement and an oblique arrowhead. Some of the less diagnostic flint may also be of Neolithic date. Two possible curated items, both axes, were found in the uppermost fill of the terminal of Bronze Age ditch 6040 (*see below*).

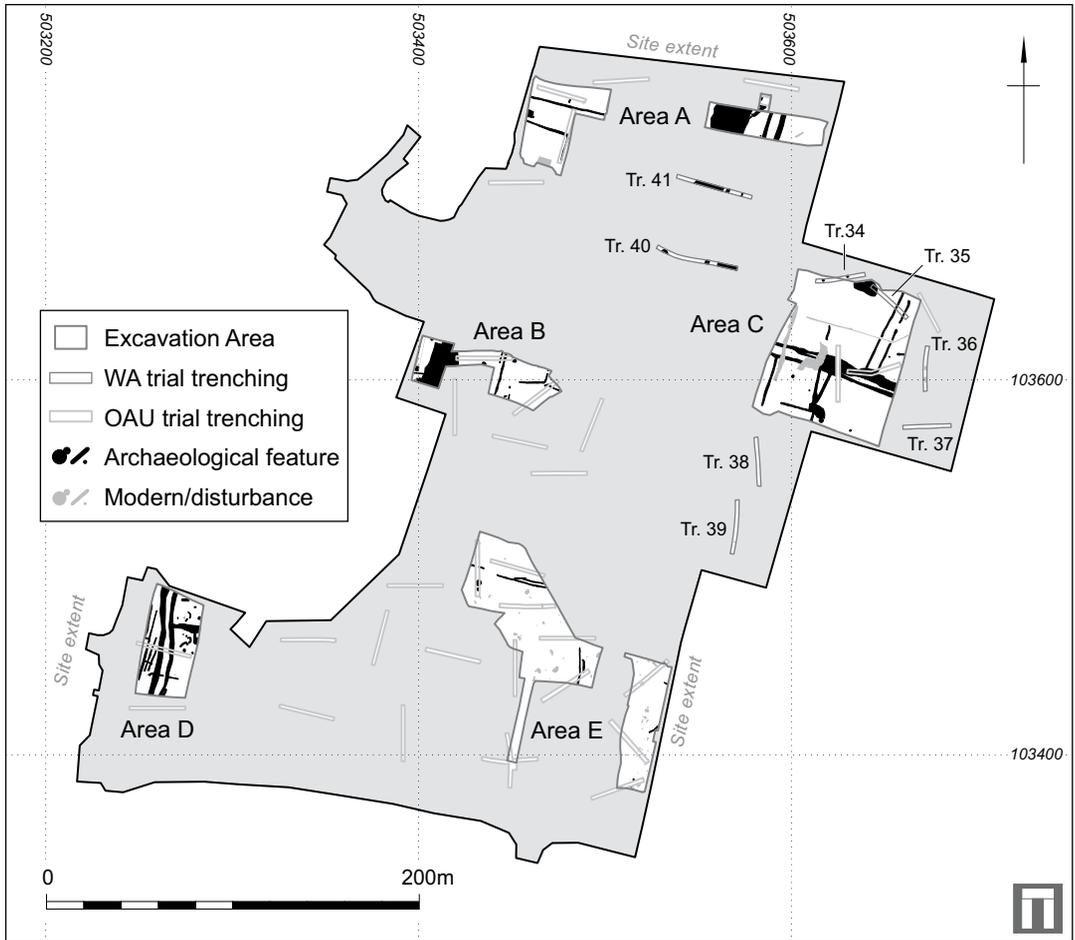


Fig. 2. Excavation areas showing selected results from the OAU evaluation.

BRONZE AGE

A little redeposited Early Bronze Age pottery, possibly Collared Urn, and flint including a crude barbed and tanged arrowhead, was found, as well as an Early Bronze Age thumbnail scraper from the evaluation (pit 3404, OAU 2005). No features were dated to the Early Bronze Age.

Evidence for Middle to Late Bronze Age activity was found mainly across the northern and eastern areas of the site and comprised a hollow-way (Area A), pits, waterholes or wells (Areas E, B, C, Fig. 3), and the remains of a possible roundhouse with an associated spread of finds (Area C, trench 34) (Fig. 3). Evidence for Middle and Late Bronze Age activity from the evaluation was of a similar character to the features examined during the excavation. Of note were the remains of a Middle

Bronze Age Bucket Urn recovered from ditch 1107 (OAU Tr. 11, Fig. 3). The rim and base of this vessel were missing, but it was unclear whether this was due to post-depositional damage or the vessel was deposited in an incomplete state. The remains of another Bucket Urn came from the fill of a nearby ditch (904 Tr. 9, Fig. 2; OAU 2005).

In Areas B and E five waterholes or wells were the only features to be confidently dated to the Middle Bronze Age (867, 899, 6046, 317 and 493, Fig. 3), although later finds in the upper fills indicate use into at least the Late Bronze Age. These were substantial features (1.14m–2.30m wide); waterhole 317 was excavated to 2.15m, while augering to 6m failed to reach its base. Deverel-Rimbury pottery and worked flint, including some redeposited Early Bronze Age material,



Fig. 3. Prehistoric features found in Areas A–C and E; selected features from OAU evaluation are also shown.

were recovered from these features. Charred plant remains included cereal grains and weeds, and animal bone. The only other contemporary feature was a short length of ditch (6044, Area B), which contained residual Early Bronze Age pottery,

Middle Bronze Age pottery, worked and burnt flint. Late Bronze Age pottery was recovered from the fill of posthole 6025 (Fig. 3).

Activity in Area A comprised ditches and a hollow-way. Ditch 6040 measured 6.8m long,

Pit 5003 (Area C) contained the lower part of a Middle Bronze Age vessel (ON 5801), within which were worked and burnt flint, a quern fragment and burnt stone. Waterhole 5019 west of pit 5003 had a diameter of 2.25m and was excavated to a depth of 2.15m but not bottomed. The upper fill (5020) contained Middle–Late Bronze Age pottery, fired clay, burnt and worked flint, and charcoal. Below this was a slightly cassy layer (5021), which contained charcoal and a worked flint. Redeposited Middle Bronze Age pottery was recovered from topsoil, Roman ditches (Groups 6011 and 6006, Area C) and medieval ditches (Groups 91 and 6003, Areas D and A respectively).

IRON AGE

Iron Age activity was poorly represented on the site, only a small quantity of Iron Age pottery and a glass bead of probable 1st-century BC date being recovered. A ditch terminal or pit (886, Area B) contained an Early Iron Age tripartite bowl (Figs 3, 8, no. 5). Late Bronze Age–Iron Age pottery was also recovered from the evaluation (OAU 2005).

ROMANO-BRITISH

In the early Romano-British period a series of enclosures or field systems was established, although their precise lay-out was not defined. Traces of these field systems, in places heavily damaged, were found in Areas B, C and E (Fig. 4), although only in Area C was there any extensive evidence. A number of undated short ditches or gullies (6024, 6026 and 6022 in Area B; 6015 and 6016 in Area E) may have been part of the same enclosure system.

A small square enclosure or paddock, 27m across, with an entrance in its south-western corner was found in Area C (ditches 6011, 6007, 6010 and 6013, Fig. 4). These ditches were up to 1.1m wide and between 0.12m and 1.1m deep. Ditch 6014, which extended to the north, may also have been contemporary, but modern disturbance had removed any relationship with other features. Romano-British pottery, a residual Middle Bronze Age sherd and burnt flint were recovered from these ditches. At some stage the enclosure was remodelled (Group 6009); a small length of ditch (5028) at the southern end of ditch 6010 may be contemporary but no dating evidence was recovered. There were few features within the enclosure but pit 5042 contained Roman pottery, flint, fired clay and cereal-processing waste. A pit

(5013) nearby contained only a little worked and burnt flint.

A north-east–south-west orientated trackway was flanked by ditches 6007 and 6008. The ditches were 1.6m wide and 0.91m deep; between them was a hollow (5074). Filling the hollow was a spread of debris (5079) from which Roman pottery, worked flint and a silver *denarius* of AD 76 (ON 2406) were recovered. The line of this trackway continued west (6012); at the north-western end there was evidence for recutting although modern disturbance in this area has hampered interpretation. The upper fill of ditch 6008 contained Roman pottery and some residual Bronze Age pottery. A large sub-oval pit (5092) measuring 3.9m by 1.4m and 0.33m deep cut through ditch 6007. The pit contained a substantial quantity of Romano-British pottery and a few lava quern fragments.

In the north-eastern part of Area C, butting up to ditch 6007, was a narrow enclosure (6006) orientated northeast to southwest, which extended for at least 40m. The ditches were 5m apart and there was an east-facing entrance, approximately 2m wide. Roman pottery, a scrap of fired clay, a little residual Bronze Age pottery and flint were recovered from the ditch. The function of these ditches is unknown, but they may have been used for stock control.

Traces of parallel ditches in Areas B and E (ditches 827, 6023, 310, 6021, 6043, 6020 and 6019) may be part of the same field system. The ditches were all approximately 1.6m apart, and 0.60m wide with a maximum depth of 0.16m. A few finds, including residual Bronze Age pottery, Roman pottery, fired clay, worked and burnt flint, were recovered.

The evaluation identified ditches of Romano-British date, which may be part of the same field system, and some Roman pottery was recovered (OAU 2005).

SAXON, MEDIEVAL AND POST-MEDIEVAL

A few residual sherds of residual probable Early to Middle Saxon pottery were recovered from the evaluation (OAU 2005) and subsequent excavation (see below). In the absence of any Saxon features, the significance of this material is uncertain.

Evidence for medieval activity concentrated in Area D (Fig. 5) but a few features were identified in Areas A (ditch 6003) and E (pits 461 and 463). Ditch 6003 measured 1.87m wide and was 0.2m

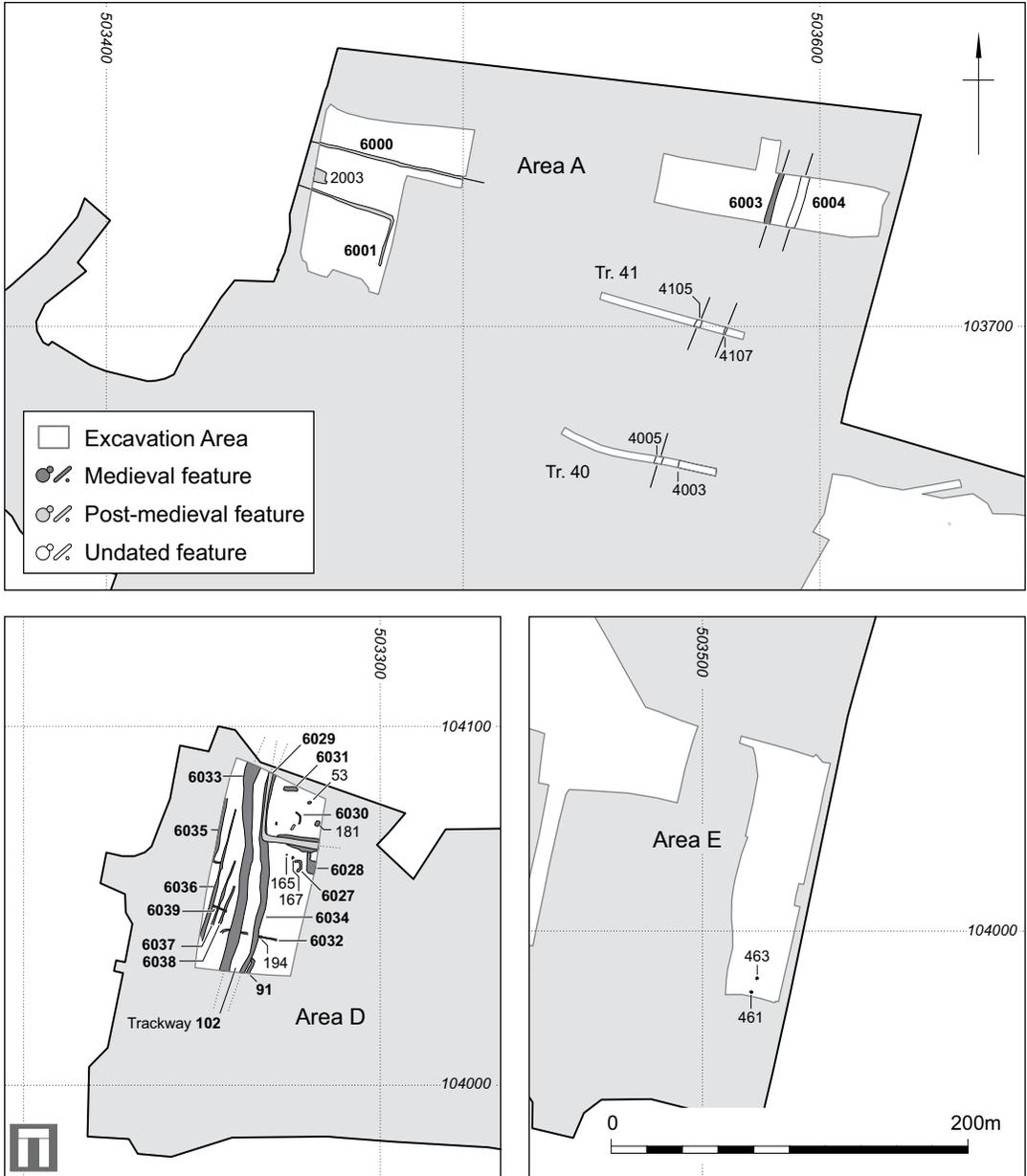


Fig. 5. Medieval and postmedieval features found in Areas A, D and E; selected features from OAU are also shown.

deep. Three sherds of medieval pottery, residual Bronze Age, Roman and Saxon pottery and burnt flint were recovered from ditch 6003. East of ditch 6003 was an undated ditch 6004, and to the south, unexcavated features, probably also ditches (4005, 4105 and 4107) and a spread (4003) which may belong with this phase of activity. Pits 461 and 463

were small, circular, up to 0.73m in diameter and 0.15m deep. A vessel tempered with patinated flint, possibly pre-conquest in date, was recovered from pit 463, and probable 13th century pottery, fired clay, a little slag and burnt flint came from pit 461.

A trackway, a number of ditches, gullies, pits and post-holes were identified in Area D. The trackway

(102) was 2.5m wide and 0.10m deep, predominantly made up of poorly sorted flint cobbles rammed into the natural brickearth. Flanking ditches (6033 and 6034) were 2.3m–1.6m wide and up to 0.90m deep. Ditches 91 and 6035–6038 may be the remains of a field system associated with the trackway. Finds from these ditches included 13th–14th century pottery, animal bone, flint, burnt flint, ceramic building material, fired clay and slag. A probable tree-throw hole (6027) contained rubbish including 13th and 14th century pottery. Ditch group 6028 east of 6027 contained 14th century pottery including a wide-mouth jar and a jug with a strap handle (see Fig. 8, nos 10–11).

Pits, post-holes and a gully to the east of ditch 6034 (53, 181, 165, 167, 194, 6030, 6031) contained pottery, ceramic building material, a few scraps of copper alloy and animal bone, as well

as residual flint and burnt flint. A pottery vessel (ON 255) from pit 53 contained cereal grain (free-threshing wheat, hulled barley, oats and rye, see Pelling below). A similar assemblage of cereal came from the fill of gully 158 (Group 6030).

Only a few features could be dated to the post-medieval period: ditch 6029 (Area D), pit 2003, ditches 6000 and 6001 (Area A). The ditches (0.5m wide, 0.5m deep) are probably the remains of field boundaries. Medieval and post-medieval pottery, animal bone, including the articulated remains of a pig, vessel glass, iron nails and a horseshoe fragment came from these ditches. Pit 2003 was substantial (4.10m wide, 0.70m deep) and contained animal bone and post-medieval pottery, ceramic building material and a sandstone roof tile, together with some redeposited Bronze Age and Roman pottery.

FINDS AND ENVIRONMENTAL REMAINS

COIN by Nicholas Cooke

A single silver *denarius* (ON 2406) issued by Domitian as Caesar in AD 76 (late in the reign of his father Vespasian) was recovered from spread 5079. The coin is worn and corroded, and has also suffered some modern damage. Although it is not possible to estimate how long the coin remained in circulation, it is likely to have been lost before the successive debasements of the silver coinage in the mid to late 2nd century AD.

FLINT by Philippa Bradley and Matt Leivers

A total of 1014 pieces of worked flint and 170 pieces (c. 46.5kg) of burnt unworked flint was recovered. The assemblage consists mainly of debitage (943 pieces) but 71 retouched

tools were recovered (Table 1). Diagnostic pieces dating from the Neolithic and Early Bronze Age were recovered; however, technologically much of the debitage appears to be later in date, probably Mid–Late Bronze Age.

The bulk of this material was probably procured locally from the chalk, and some poorer quality material from river gravels. Possible products of the Sussex flint mines were present. Some post-depositional damage was noted, but generally the material is fresh with relatively sharp edges; some usewear was noted. A few pieces of worked flint had been burnt.

Flint working

Chronologically diagnostic retouched forms are not common, but the few recovered indicate primarily Neolithic and Early Bronze Age activity. Of the former, the majority are probably Early or Middle Neolithic, and include a well-made leaf-shaped arrowhead (Fig. 7, no. 6) from tree-throw hole 99, the blade end of a narrow lenticular-profiled polished flint axe (Fig. 6, no. 2) and a nearly complete small, thin, narrow-butted axe with heat damage to the blade end (Fig. 6, no. 1), both from the terminal of Middle Bronze Age ditch 6040 (see below). A large flake from a ground flint axe from the subsoil is seemingly a spontaneous removal occurring during use. A fragmentary oblique arrowhead (Fig. 7, no. 5, context 4008) and the butt-end of a probable chisel fragment (Fig. 7, no. 3) came from subsoil (5001). A bifacially flaked nodule may be a rough-out for an axe of Mesolithic or Neolithic date. Early Bronze Age forms are more restricted: a very crude barbed and tanged arrowhead from Middle Bronze Age (ditch 2048), several scrapers, edge-flaked knives from a Middle Bronze Age well (486) and a fabricator (Fig. 7, no. 4) from ditch 2035 (Group 6004).

Less diagnostic retouched forms were also recovered, some of which are likely to be Neolithic or Early Bronze Age. Scrapers and retouched flakes dominate the retouched assemblage, with a few other types present (Table 1) indicative of domestic activities such as knapping, scraping, food preparation and hunting. There are hints, however, that some

Table 1. Summary of retouched forms.

Type	Number
Scrapers	24
Retouched flakes	19
Serrated flakes	2
Core tools	3 (1 polished and flaked axe, 1 axe rough-out, 1 chisel fragment)
Arrowheads	3 (1 leaf, 1 chisel, 1 barbed and tanged)
Piercers	5
Rod/Fabricator	1
Hammerstones	2 (1 quartzite pebble, 1 possible anvil)
Knives	5
Denticulates	2
Miscellaneous retouch	5
Total	71

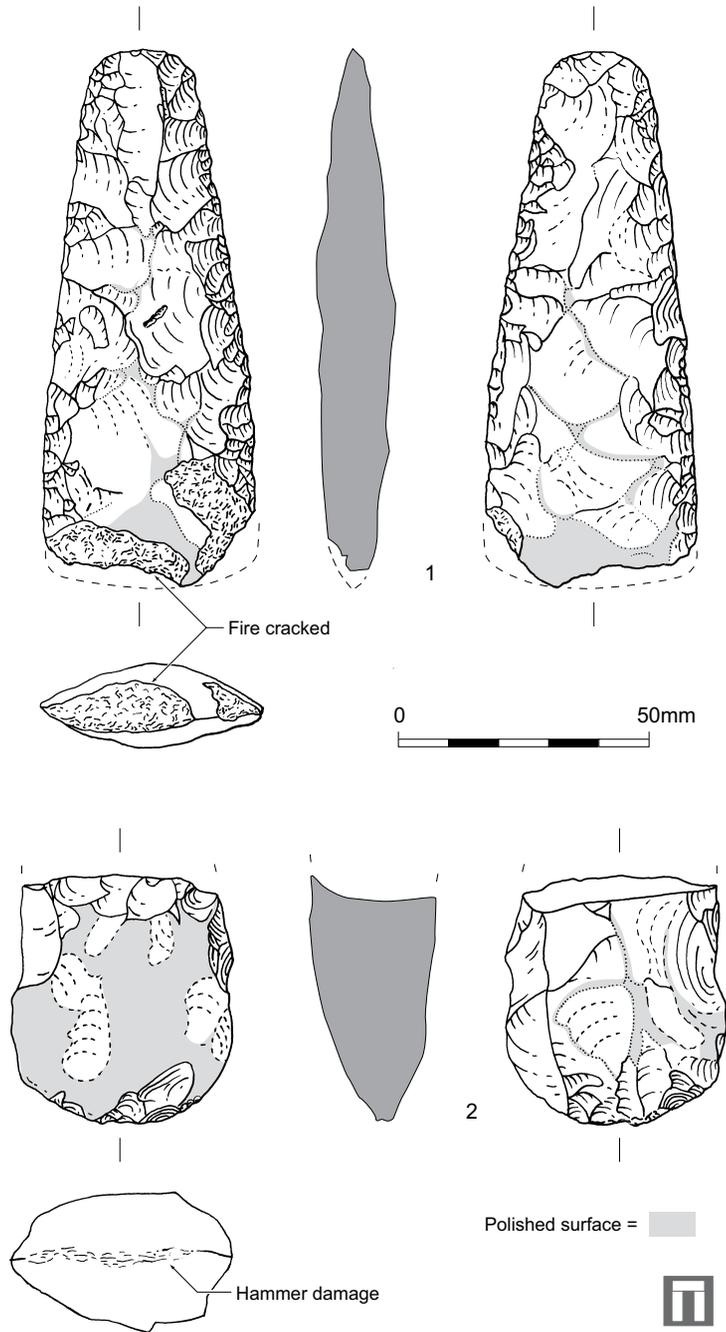


Fig. 6. Axe and axe fragment from Middle Bronze Age ditch 6040 (1-2).

deposition on site may be of a slightly different character (see below).

A number of probable Middle-Late Bronze Age retouched pieces included crudely worked scrapers on thick, often cortical, flakes, minimally retouched flakes, denticulates

and crudely formed piercers (Ford *et al.* 1984; Young and Humphrey 1999).

The cores and fragments are flake types, many of which have been fairly unsystematically worked, but a number of well-worked flake types are probably of Neolithic or

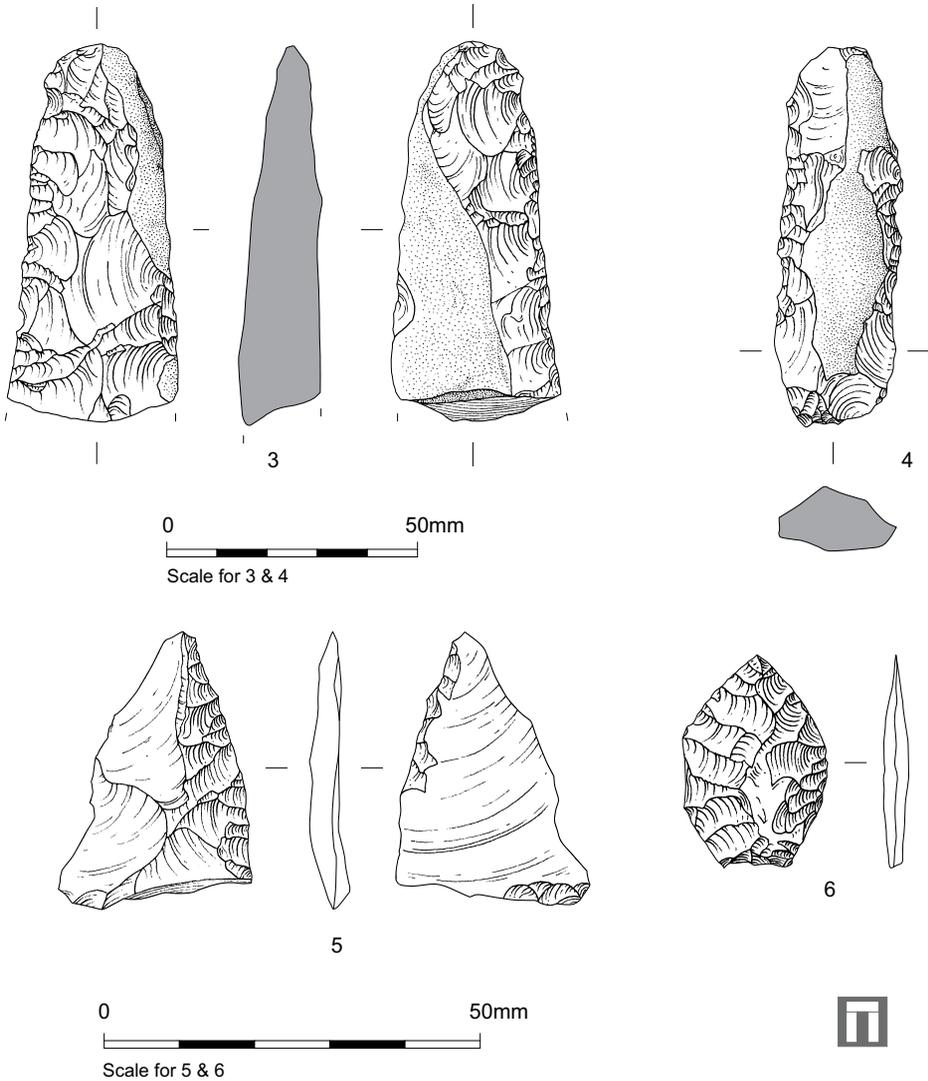


Fig. 7. Selected flint — probable chisel fragment (3), fabricator (4), chisel arrowhead (5) and leaf-shaped arrowhead (6).

Early Bronze Age date (e.g. contexts 486 and 912). Some core platforms were being prepared and maintained, again supporting a Neolithic or Early Bronze Age date for some of this material.

Two heavily burnt core fragments together with some burnt stone and a quern fragment were recovered from the lower part of a Middle Bronze Age vessel (5004) within pit 5003.

There was very little evidence for blade production; an occasional blade scar was noted, but only four blades/bladelets were recovered. Much of the debitage consists of thick, irregular, often cortical flakes. Hard hammers dominated, and many accidents of knapping were noted. There was a component of thinner, more carefully worked flakes, some possibly soft-

hammer struck, which are likely to be earlier in date.

Significant groups

The most immediately striking group is the material from the fill of ditch 2048, which included some carefully knapped flakes of probable Neolithic date, together with the polished axe and axe fragment. The fragmentary axe seems to have broken during use, while much of the blade of the flaked axe has been heavily burnt. Neither shows a great deal of post-depositional damage. Two possibilities present themselves. Either the axes (and other debitage, which is in similarly good condition) were originally deposited in a pit or other feature which was subsequently disturbed and its contents incorporated into the ditch fills, or the axes are curated objects that were placed

Table 2. Prehistoric and Roman pottery.

Date	Fabric code	Description	No. sherds	Weight (g)
Neolithic	F6	Sparse angular flint	1	5
	F7	Fine flint	1	11
	GF1	Peterborough Ware	2	9
Early Bronze Age	G1	Grog-tempered fabric	6	7
Middle Bronze Age	F2	Deverel-Rimbury, fine flint-tempered	356	2894
	F4	Coarse Deverel-Rimbury fabric	100	416
Mid-Late Bronze Age	F1	Miscellaneous coarse flint-tempered fabrics	45	107
	F3	Moderate flint-tempered fabrics	2	9
Later Prehistoric	Q99	Unidentified sandy fabrics, later prehistoric	1	1
	F6	Sparse angular flint (similar to Neolithic)	137	775
Romano-British	E100	Samian	8	68
	Q100	Miscellaneous greywares	314	2376
	Q101	Sandy fabrics	19	32
	Q102	Fine greywares	20	60
	Q103	Rowlands Castle	6	70
	Q110	Oxidised sandy	53	234
	Q111	Whitewares	7	216
Saxon	V1	Organic	1	3
Total			1079	7293

deliberately into the ditch terminal. Two other pieces from this context are a crudely worked scraper and a very crude barbed and tanged arrowhead, which may have been abandoned unfinished; these pieces indicate a mixed group.

The possibility of Neolithic axes deliberately incorporated in later deposits is not without parallel. A complete axe was found in a Middle Bronze Age waterhole at Heathrow (Cramp and Leivers 2010), and another came from the Bronze Age enclosure at Rams Hill, Berkshire (Bradley and Ellison 1975, 86), where its position in a foundation trench for the rampart at the southern entrance may be of some significance (Bradley 2002, 54). A complete small axe was found at the base of an Iron Age pit at Gussage All Saints (Clough and Cummins 1988, 161). An incomplete axe was found in the central post-hole of a house at Thorney Down, Wiltshire, where it was associated with Deverel-Rimbury pottery. Stone stated that 'its occurrence here can hardly be fortuitous' (1941, 132), and an axe fragment was found in the ditch of the Bronze Age enclosure at Boscombe Down East (Stone 1936, 479). A fragment from an axe was found in a pit with later Bronze Age pottery at Weston Wood, Albury, Surrey (Field and Woolley 1984, 97). In the majority of these examples the axes were found as foundation deposits, but at Littlehampton the axes came from the upper fills of the ditch. It is possible that an earlier feature and its contents were disturbed in the Bronze Age when the ditch was dug. The flintwork, including the axes, could equally have been inserted into the ditch at the end of the Bronze Age or later.

Two Middle Bronze Age wells or waterholes (493, 899) contained substantial groups of flint, including some residual material of probable Early Bronze Age date. A more irregular element is characteristic of Middle Bronze Age flintworking.

POTTERY by Kayt Marter Brown and Lorraine Mephram *with a contribution by Alistair Barclay*

The prehistoric and Romano-British pottery comprised 1079 sherds (7293g), the post-Roman assemblage amounting to 618 sherds (8253g), of which 172 sherds (3609g) are post-medieval and are not considered further here (full details are held in the archive). The prehistoric pottery ranges from Early Neolithic to Late Bronze Age, although much of this material is redeposited. Romano-British pottery is restricted in terms of composition and date range, dominated by local coarsewares unlikely to date later than the 2nd century AD.

Fabrics

The standard Wessex Archaeology recording system for pottery (Morris 1994) was employed which takes into consideration recognised published guidelines (for example PCRG 1997). Within this system, fabrics were defined by range and size of principal inclusion types, and divided into fabric groups, e.g. Flint-tempered (F), Grog-tempered (G), 'Established' wares of known type or source (E).

Brief fabric descriptions, and quantification by sherd count and weight, are given in Tables 2 and 3. In the case of the prehistoric and Roman material, the poor condition of the diagnostic sherds in most instances precluded identification beyond basic vessel form. These data may be found in the archive.

Flint-tempered fabrics dominated the prehistoric assemblage, and these were divided into six fabric groups, based on the size and frequency of the flint inclusions. A small number of sherds were either grog- or sand-tempered. In the absence of a local type series for the Roman wares, these sherds have been recorded using the Wessex recording system,

Table 3. Medieval pottery.

Fabric code	Correlations	Description	No. sherds	Weight (g)
C400	AV DB	Coarse chalk-tempered fabric	7	76
F400	AV DD	Coarse flint-tempered fabric	3	11
F401	CSW 32	Oxidised flint-tempered fabric with some sand	11	145
F402	AV DC	Coarse flint-tempered fabric (patinated flint)	48	206
Q400	SCS; CSW 8	Coarse sandy fabric	140	1404
Q401	CSW3	Coarse sandy fabric with flint	16	178
Q402	CSW 32?	Medium coarse sandy fabric with rare flint	11	86
Q403	SMS	Fine sandy fabric, generally pale-firing	209	2515
Q404	-	Fine sandy fabric, oxidised orange-red	1	23
		sub-total medieval	446	4644
-	-	All post-medieval wares	172	3609
		Overall total	618	8253

AV = Adur Valley; CSW = Central Sussex Weald; SCS = Steyning Coarse Sandy ware; SMS = Steyning Medium Sandy ware

in keeping with the published assemblage from the nearby pottery production area to the north of the site (Laidlaw 2002). The medieval pottery has been divided into nine fabric types on the basis of the range and size of inclusions. These fall into three broad groups: chalk-tempered (C), flint-tempered (F) and sandy wares (Q). Reference has been made where possible to published type series from the region, such as the Adur Valley Saxo-Norman fabrics (Gardiner 1990), and the Central Sussex Weald (CSW) and Steyning fabrics (Gardiner 1997).

Early Neolithic by Alistair Barclay

Two rims are of Early Neolithic date. A semi-rolled rim (Fig. 8, no. 1) from subsoil layer (5001) in a fine flint fabric (F7) has interior fluting marks and a probable pre-firing drilled hole either for repair, suspension or to attach a cover. A second rolled rim also came from this layer (Fig. 8, no. 2). A little Early or Middle Neolithic decorated pottery was recovered from the evaluation (OAU 2005).

Bronze Age

Two flint and grog-tempered sherds, a body sherd and a small rim sherd (Fig. 8, no. 3) with twisted cord decoration may be from Collared Urns. Six grog-tempered body sherds (fabric G1) have been dated to the Early Bronze Age and may also derive from Collared Urns, although this is based purely on fabric type, given the absence of diagnostic sherds. A rim from context 830 is possibly from an urn of Early Bronze Age date.

A substantial proportion of the prehistoric assemblage comprises flint-tempered fabrics, in varying degrees of coarseness, which have been assigned to the Middle and Mid-Late Bronze Age. Within this material, four distinct fabric groups were identified. Sherds in a coarse but well-sorted flint-tempered fabric, often with thicker vessel walls, have been attributed to the Middle Bronze Age Deverel-Rimbury ceramic tradition (fabric F2). The only diagnostic sherd in this fabric was a single rim fragment from context 489, the fill of waterhole 493. A rim from a layer associated with the roundhouse (5062, Fig. 8, no. 4) is Mid-Late Bronze Age from a Bucket Urn or a straight-sided jar. Base and lower body sherds of a single vessel (ON 5804) were recovered from layer 5062, while a second large vessel (ON 5801) in

this coarseware fabric came from a small pit (5003) and may have been deliberately placed, since it contained a mix of burnt unworked flint and stone, including a quern fragment. An increasing number of such deposits are being recognised, for example at Westhampnett, Chichester (Chadwick 2006, 18–20) and Twyford Down, Winchester (Walker and Farwell 2000, 21–2). A finer flint-tempered variant (fabric F4) probably represents the fineware component of the Deverel-Rimbury tradition; three small rim sherds were the only diagnostic sherds identified from layers 879, 5001 and 5062 (Fig. 8, 4). The remainder of the prehistoric assemblage comprises body sherds in coarse but poorly sorted flint fabrics (fabric F1, F3). Due to the absence of featured sherds, combined with an average sherd weight of less than 3g for much of this material, they have been assigned a broad Mid-Late Bronze Age date. Similar flint-tempered material was identified to the north of the site (Laidlaw 2002, 28) and other parallels are numerous across Sussex, such as Westhampnett (Chadwick 2006; Fitzpatrick et al. 2008), Yapton (Hamilton 1987) and Mile Oak Farm, Portslade (Hamilton 2002).

Early Iron Age

Part of the rim and shoulder from a large Early Iron Age tripartite bowl was recovered from feature 886 (Area B, Figs 3, 8, no. 5). The ill-sorted flint-tempered fabric of this vessel is slightly unusual and more in keeping with earlier pottery. Such vessels are often made from fine or even untempered fabrics. However, the angular form is almost certainly of Early Iron Age date (e.g. Cunliffe's Park Brow–Caesar's Camp group which he places in the 5th–3rd centuries BC: Cunliffe 1991, 72 and fig. A: 8).

Romano-British

A small Romano-British assemblage (428 sherds, 3059g) was recovered. There was a paucity of diagnostic sherds and the pottery was in generally poor condition, with an average sherd weight of just 7g.

The only imported sherds present were seven sherds from a South Gaulish samian platter (Dragendorff form DR 15/17), which had a lead repair. There was a single sherd of British fineware, a sherd of probable 'Pulborough' samian, a locally

made samian imitation characterised by its poor workmanship and overfired fabric, and thought to be manufactured during the 2nd century (Dickinson 1997).

The assemblage was dominated by reduced sandy coarsewares (fabrics Q100, Q101, Q102), most, if not all, of which are likely to derive from local sources; excavations nearby found two kilns which produced similar reduced wares (Lovell 2002). An over-fired, almost vitrified sherd from the Nurseries site may be a 'waster' from pottery production. Pottery production has also been recorded to the north of the site at Hardham and Wiggonholt (Evans 1974), and a small quantity of sherds within the assemblage originate from the production area of Rowlands Castle (fabric Q103), on the Hampshire/Sussex border. Forms present in this element of the assemblage comprise necked and everted rim jars (Fig. 8, no. 6), two flared dish/bowl rims, two bead-rim bowls, one with a groove on the rim, and a single imitation Gallo-Belgic platter (Fig. 8, no. 7). Although some of the jar forms continue through most of the Romano-British period, there are no typically late forms; likewise, within the bowl/dish rims the few forms that are present are unlikely to date later than the 2nd century. Oxidised and whiteware fabrics were poorly represented and again are likely to be local products, particularly in the case of the single whiteware flagon, which may originate from the Wiggonholt kilns.

Overall, the Roman assemblage provides a small adjunct to the more substantial assemblage from the adjacent Horticultural Research International (HRI) site (Laidlaw 2002), although it is not as diverse in terms of the range of fabrics and forms.

Saxon

A single sherd in an organic-tempered fabric (fabric V1) may be Saxon in date, and four sherds of early-mid Saxon pottery came from the evaluation (OAU 2005).

Medieval

Small quantities of flint-tempered (F400, F402) and chalk-tempered wares (C400) fall within the Saxo-Norman ceramic traditions of the region. Two vessels in a patinated flint-tempered fabric F402 (pit 463, ditch 6003) could be pre-conquest; Adur Valley fabric DC is unlikely to be later than c.1100 (Gardiner 1993, 41). Otherwise, this small group has a broad date range of 10th–12th century. The only diagnostic sherd is a thickened jar rim in fabric C400.

By the late 12th century sandy wares were developing, and these form the bulk of the assemblage, probably dating to the 13th and 14th centuries. A broad division has been made here between coarse sandy wares (Q400, Q401, Q402) and fine sandy wares (Q403). The coarse sandy wares were used for square-rimmed jars and bowls, and for skillets with tubular handles (Fig. 8, nos 8–9).

Fabric Q403 makes up almost all of the fineware component of the assemblage, and covers a range of variation in terms of quartz sand content and surface colour (although generally pale-firing) that can be accommodated within the known range of wares from the Binsted kilns, which are dated typologically to the 14th to early 15th centuries (Barton 1979, 170–79). Similar wares were also made at Chichester in the 13th century, although these are generally deeper in colour than the Binsted products, which tend to be pale-firing through exploitation of the clay from the Reading Beds. More recently, wasters have been found at Steyning which are also

comparable to this range of finer sandy wares (Gardiner 1997, fabric SMS). Flint-tempered wares equivalent to F401 were produced at Binsted and Chichester, and flint temper may be a feature of 13th century kilns on the Sussex Coastal Plain (Gardiner 1997, 161).

A large proportion of the sherds in Q403 are glazed, and this fabric was certainly used for jug forms, sometimes with slip-painted or applied decoration, but jars and bowls in similar square-rimmed forms to the coarsewares are also found (Fig. 8, nos 10–11). The range of medieval wares is fairly typical of assemblages of this date range from West Sussex. As well as assemblages from Steyning (Gardiner 1993; 1997), a closely comparable assemblage has been recorded from Worthing (Mephram 2001).

The trackway (102; 146 sherds) and its associated ditches (6033, 6034) can be fairly confidently dated to the 13th/14th centuries. A post-medieval redware sherd from the secondary fill of ditch 6033 may be intrusive; ditch 6034 was cut by ditch 6029, which contained 19th century wares. The only other medieval feature to yield more than 25 sherds was 6027 (a tree-throw hole, 71 sherds), again probably of 13th or 14th century date. Quantities of pottery from other medieval features were too small to enable confident dating, but there is no firm evidence that any are either pre-13th century or post-14th century.

In Area E sherds of patinated flint-tempered fabric F402 from pit 463 probably pre-date c. 1100, while the sandy/flint-tempered sherds from pit 461 are later, probably 13th century. One other medieval feature was located in Area A (ditch 6003; three sherds).

Catalogue of illustrated sherds (see Fig. 8)

Prehistoric

1. Semi-rolled rim, fluting on interior surface, drilled hole below rim, Early Neolithic, fabric F7, context 5001, subsoil.
2. Rolled rim, Early Neolithic, fabric F4, context 5001, subsoil.
3. Rim, Early Bronze Age, ?Collared Urn, fabric GF1, context 830, ditch 829.
4. Rim, Mid-Late Bronze Age, Bucket Urn or straight-sided jar, fabric F4, context 5062, layer.
5. Tripartite Bowl, Early Iron Age, fabric F6, context 888, ditch 886.

Roman

6. Jar rim, fabric Q100, context 5065, ditch 5064.
7. Gallo-Belgic imitation platter, fabric Q100, context 5065, ditch 5064.

Medieval

8. Skillet handle; fabric Q400. Context 39, ditch 41.
9. Wide-mouthed jar; fabric Q400. ON 255, Context 48, pit 53.
10. Wide-mouthed jar; finger-impressed rim; fabric Q403. Context 106, ditch 6028.
11. Jug with strap handle; fabric Q403. Context 106, ditch 6028.

OTHER FINDS by Lorraine Mephram

A small number of other finds (metalwork, glass, slag, fired clay) were recovered (WA 2008), much of it from medieval or post-medieval contexts. Notable among this material is

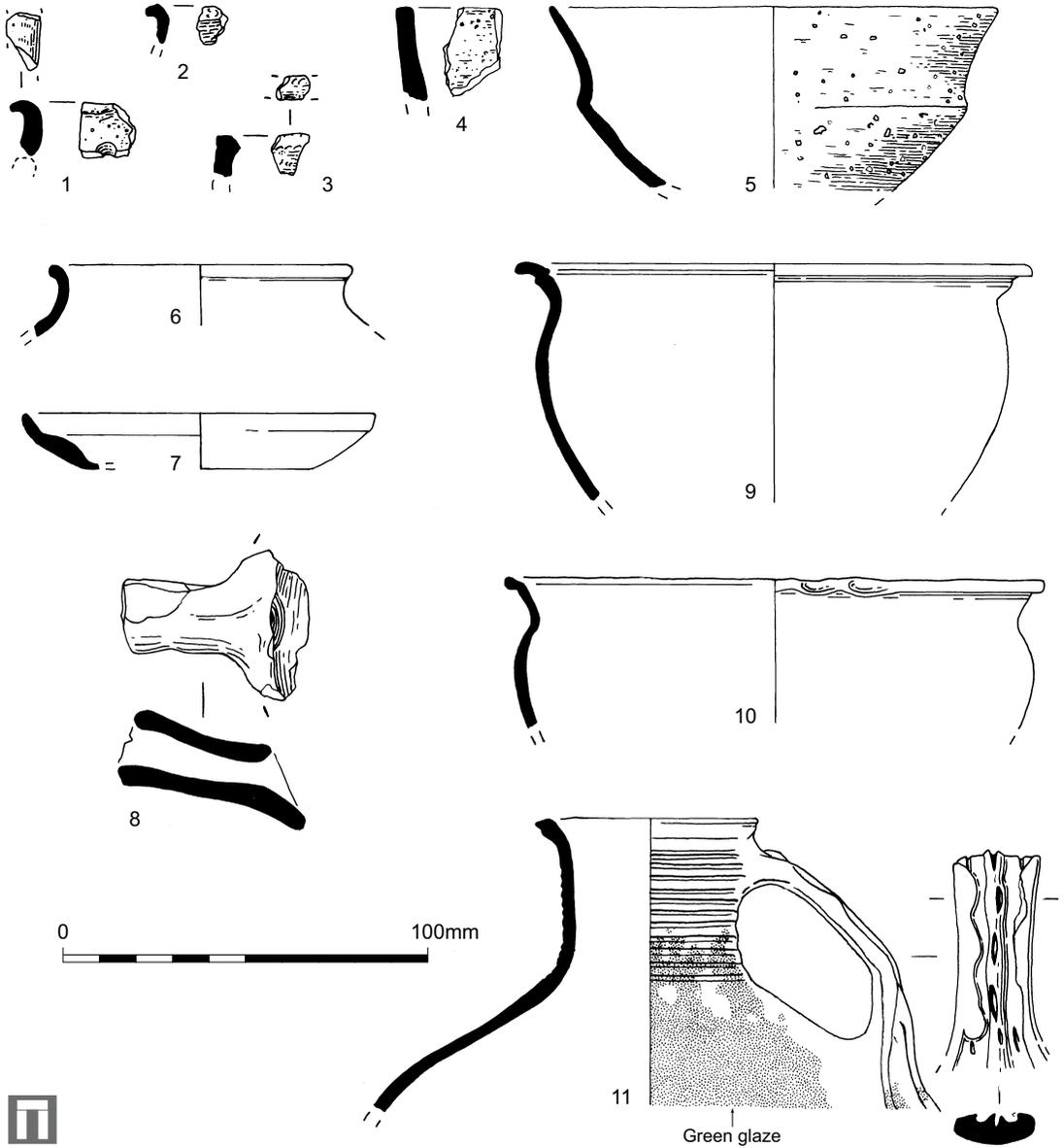


Fig. 8. Selected prehistoric (1–5), Roman (6–7) and medieval pottery (8–11) (details in the catalogue).

a fragmentary decorated glass bead (context 2) of dark blue with marvered 'eyes' enclosed by double white circles. This would seem to be an Iron Age type of continental inspiration, although no direct parallels in Guido's typology can be found (Guido 1978, see classes 2 and 3). A probable 1st century BC date is likely for this bead.

A fragmentary triangular loomweight (context 5017) was found associated with Romano-British pottery. A large curved, fired-clay slab of uncertain function came from context 462;

associated pottery suggests an early medieval date.

A greensand quern fragment was recovered from the fill of an apparently deliberately placed Middle Bronze Age vessel (context 5004, pit 5003). It was associated with two burnt core fragments, burnt unworked sandstone and flint. Greensand (including some probable Lodsworth examples), sandstone and imported lava quern fragments were recovered from several contexts. Few pieces could be attributed to specific quern forms, but a fragmentary rotary quern came from

Table 4. Species list (NISP). *Partial skeletons (quantity from sample).

Species	Middle Bronze Age	Medieval/post-medieval
Mammals		
Horse (<i>Equus caballus</i>)		7
Cattle (<i>Bos Taurus</i>)	3	25
Sheep/Goat (<i>Ovis/Capra</i>)	2	15
Pig (<i>Sus domesticus</i>)	1	44* (5)
Dog (<i>Canis familiaris</i>)		1
Birds		
Carriion crow (cf <i>Corvus corone</i>)		3
Magpie (<i>Pica pica</i>)		1
Domestic fowl (<i>Gallus gallus dom.</i>)		1
Starling (<i>Sturnus vulgaris</i>)		1
Size classes		
Large mammal		41
Medium mammal	6 (1)	118 (103)
Total	12 (1)	257 (108)

the upper fill of waterhole 317 (context 376). A few pieces of medieval or later sandstone and slate roof tiles were also recovered.

ANIMAL BONE by Jessica M. Grimm

Methodology and quantification

For each animal bone fragment, the following characteristics were recorded where applicable: species, bone element and side, fusion, mandible wear stages (following Grant 1982 and Levine 1982), sex and measurements (following von den Driesch 1976). Ages were estimated using Habermehl (1975) and Jones (2006). The positions of butchery marks were recorded according to Lauwerier (1988). The data published by Wahl (1981) were used to establish the degree of burning. Evidence for gnawing and condition (on a scale of 1 to 5) were recorded. The zone system of Serjeantson (1996) was used to record completeness.

Conjoining fragments were counted as one bone in order to minimise distortion. Fragments that could not be identified to species or family were recorded as small, medium or large mammal. Full details of the assemblage may be found in the archive.

The assemblage consists of 269 hand-collected mammal and bird bone fragments, and 109 fragments of mammal bone came from samples. The material is mainly medieval to post-medieval in date, with small quantities of material dating to the Middle Bronze Age (contexts 318, 321, 322, 376 and 379, fills of waterhole 317, Table 4).

Condition and preservation

The overall condition of the bone is fair, with some contexts in poor condition, notably those dating to the Middle Bronze Age. As only three bones showed signs of gnawing, canid scavenging was possibly not a significant biasing factor.

However, the large number of teeth (*see* below) and poorly preserved bones generally do not show gnawing marks. Five medium mammal fragments from early medieval context 464 were burnt. At 16%, the number of loose teeth among the identified bone is quite high. Together with the possible over-representation of cattle and horse, this indicates unfavourable conditions for bone preservation rather than extensive reworking. This is further underlined by the presence of articulated bone in contexts 50 and 64 (pig) and 125 (cf. carrion crow).

Species proportions

Since the number of identified animal bones is very small for both assemblages, species proportions were not calculated. The Middle Bronze Age assemblage consists of six identified bones of cattle, sheep/goat and pig (*see* Table 4).

Besides the usual domesticates, the medieval/post-medieval assemblage contained the remains of magpie (context 77), chicken (93), cf. carrion crow (125) and a passerine of starling size (47). The presence of corvids is not surprising; they would have been attracted by human waste but they were also eaten in the past (Schuster 2001, 393).

Population characteristics

A juvenile cattle tooth in the Middle Bronze Age material indicates the presence of young animals. The medieval/post-medieval material includes bones from both juvenile and adult animals, but with an emphasis on sub-adult animals. Chicken may have been kept for both eggs and meat.

Butchery and deposition

Only one fragment of a cattle rib showed signs of butchery, parallel cuts indicating filleting. The material was not characterised by a particular type of waste and all parts of the skeleton are represented. This could indicate that animals were probably butchered and meat processed nearby, or that waste from both butchery and kitchen was deposited on the site.

Contexts 50 (medieval trackway ditch, Group 6033) and 64 (post-medieval ditch Group 6029) contained the remains of sub-adult pigs. The head and mandibles as well as some fragments of humerus, radius, metapodials and carpals were recovered from context 50. It is unclear whether the hindquarters were present. Tooth eruption and bone fusion indicate that this pig was 16–24 months of age, an ideal butchery age which guarantees maximum meat yield. The small canines indicate that this was a sub-adult sow. Context 64 contained a right hind leg comprising the femur and tibia as well as fragments of the calcaneus, talus and the ribs. The presence of loose but matching epiphyses in both contexts indicates primary deposition. It is impossible to say whether these animals were originally complete or that only parts were buried because preservation was not very good. It is unclear why these animals were not eaten; no obvious butchery marks were found.

CHARRED PLANT REMAINS by Ruth Pelling

Introduction and methodology

Bulk samples were taken during the excavations for the recovery of charred plant remains and charcoals. Bulk samples were processed by standard flotation methods and the flot retained on a 0.5mm mesh. Following the assessment, 11 samples were chosen for more detailed analysis: 4 samples from Middle Bronze Age contexts (2 waterholes, 317 and 899,

Table 5. Charred plant remains from Bronze Age and Romano-British deposits.

	Sample	602	603	1013	5759	1001	5753	5754	5755	5756
	Context	318	302	911	5062	810	5017	5045	5043	5065
	Feature	317	317	899	-	809	5015	5042	5042	5064
	Feature type	pit?	pit?	pit	layer	ditch	ditch	pit	pit	ditch
	Area	E West	E west	B Gp 909	C	B Gp 818	C	C	C	C
	Phase/date	MBA	MBA	MBA	MBA	RB?	M-L RB	RB	RB	M-L RB
	Sample volume (l)	30	30	27	10	27	20	10	10	10
Cereal grain										
<i>Triticum spelta</i> L.	Spelt wheat grain	-	-	-	-	2	-	-	-	-
<i>Triticum</i> cf. <i>spelta</i> L.	cf. Spelt wheat	-	-	-	-	-	2	2	2	14
<i>Triticum</i> cf. <i>spelta</i> L.	cf. Spelt wheat, germinated grain	-	-	-	-	-	2	4	-	1
<i>Triticum spelta/dicoccum</i> L.	Spelt/Emmer wheat	1	-	-	1	-	10	-	1	2
<i>Triticum aestivum/turgidum</i>	Bread type/Rivet wheat grain	-	3	-	1	1	1	-	-	7
<i>Triticum</i> sp.	Wheat grain	2	-	1	-	1	8	2	4	20
<i>Hordeum vulgare</i> sl.	Barley, hulled grain	4	3	1	5	-	7	4	4	31
<i>Avena</i> sp.	Oats	-	-	-	-	-	2	2	2	10
<i>Secale cereale</i> L./ <i>Triticum</i> sp.	Rye/Wheat grain	-	1	-	-	-	-	-	-	-
Cerealia indet.	Indeterminate cereal sized grain	12	4	4	2	4	17	17	19	141
Cereal chaff										
<i>Triticum spelta</i> L.	Spelt, glume base	-	-	1	-	11	22	43	30	81
<i>Triticum</i> cf. <i>spelta</i> L.	cf. Spelt glume base	-	-	2	-	-	-	-	-	-
<i>Triticum dicoccum</i> L.	Emmer wheat glume base	-	-	-	-	-	-	1	-	-
<i>Triticum spelta/dicoccum</i> L.	Spelt/Emmer wheat glume base	9	1	8	16	120	90	154	172	144
<i>Triticum spelta/dicoccum</i> L.	Spelt/Emmer wheat spikelet	-	1	-	4	6	10	7	6	26
<i>Triticum</i> sp. hexaploid	Bread/Spelt wheat internode	-	-	2	-	3	-	-	4	2
<i>Triticum</i> sp.	Wheat rachis internode	1	-	-	-	3	-	-	3	4
<i>Hordeum vulgare</i> sl.	Six-row barley rachis	-	-	-	-	-	2	2	1	1
<i>Avena fatua</i> L.	Wild oats, floret base	-	-	-	-	-	-	-	1	-
<i>Avena</i> sp.	Oats floret fragment	-	-	-	-	-	1	1	-	-
Cerealia indet.	Indet basal node	-	-	-	-	-	-	-	-	2
Cerealia indet.	Sprouted coleoptile	-	-	-	-	-	1	5	7	5
Cerealia indet.	Detached embryo	-	1	-	-	1	-	-	-	-
Cereal sized	Rhizome	-	-	-	-	-	-	-	1	-
Pulses										
<i>Vicia faba</i> var <i>minor</i> L.	Celtic/Horse bean	-	-	-	-	-	-	-	-	5
cf. <i>Vicia faba</i> var <i>minor</i> L.	cf. Celtic/Horse bean	-	1	-	-	-	-	-	-	-
<i>Vicia sativum/Pisum</i> sp.	Vetch/Pea	-	-	-	-	-	2	-	-	9
<i>Vicia/Pisum/Lathyrus</i> sp.	Vetch/Pea/Vetchling	-	-	-	3	-	-	-	-	17

Table 5. (cont.)

	Sample	602	603	1013	5759	1001	5753	5754	5755	5756
	Context	318	302	911	5062	810	5017	5045	5043	5065
	Feature	317	317	899	-	809	5015	5042	5042	5064
	Feature type	pit?	pit?	pit	layer	ditch	ditch	pit	pit	ditch
	Area	E West	E west	B Gp 909	C	B Gp 818	C	C	C	C
	Phase/date	MBA	MBA	MBA	MBA	RB?	M-L RB	RB	RB	M-L RB
	Sample volume (l)	30	30	27	10	27	20	10	10	10
<i>Tripleurospermum inodorum</i> (L.)Sch.Bip	Scentless Mayweed	-	-	-	-	-	-	2	1	-
Asteraceae indet.	Large seeded	-	-	-	-	-	-	-	-	1
Asteraceae indet.	Small seeded	-	-	-	-	-	-	-	3	-
Poaceae small seeded	Grass, small seeded	-	2	-	-	-	1	-	-	-
Poaceae large seeded	Grass, large seeded	-	-	-	1	-	-	5	1	5
<i>Bromus</i> sp.	Brome grass	-	-	-	-	2	2	3	1	13
<i>Phleum/Poa annua</i> type		1	-	-	1	-	-	3	4	-
<i>Lolium/Festuca</i> type		-	-	-	-	1	-	-	-	-
<i>Schoenoplectus</i> sp.		-	-	-	-	-	-	-	-	2
Query - wood item?		-	-	-	-	-	-	-	-	1
Indet. fungal spore		-	-	1	-	8	-	-	-	-
Indet. weed seed		3	5	-	4	2	1	3	6	13
Recent Chenopodiaceae		6	-	18	-	-	-	-	-	-

and a layer, context 5062), a range of Romano-British features including ditches (809 and 5015 and 5064) and a pit (5042), and two medieval deposits from the fill of a pot (pit 53) and a gully (158). Charred seeds, chaff and other identifiable and quantifiable items were extracted and examined under a $\times 10$ – $\times 40$ stereo-binocular microscope. Nomenclature follows Stace (1997). The results are presented in Tables 5 and 6.

Middle Bronze Age

Middle Bronze Age samples were examined from Area E (waterhole 317, two samples), Area B (waterhole 899) and layer 5062 in Area C. All four samples produced modest quantities of charred grain, chaff and weed seeds. Hulled wheat (*Triticum spelta/dicoccum*) including a single glume base identified as spelt wheat (*T. spelta*) and barley (*Hordeum vulgare*) were present. Hexaploid wheat rachis from waterhole 899 is also likely to derive from spelt wheat. Possible bean (*Vicia faba* var *minor*), flax (*Linum usitatissimum*) and fragments of hazelnut shell (*Corylus avellana*) were also identified.

Free-threshing wheat type grain (*T. aestivum/turgidum*, bread/rivet type wheat) and rye/wheat grain (*Secale cereale/Triticum* sp.) were present in context 302, waterhole 317. As this deposit also produced seeds of stinking chamomile (*Anthemis cotula*), rarely recorded prior to the Romano-British period, this grain is likely to be intrusive medieval material.

Weed seeds were poorly represented, particularly in waterhole 899 and layer 5062. Docks (*Rumex* sp.), cleavers (*Galium* sp.), small-seeded legumes (*Vicia/Lathyrus* sp. and *Medicago/Trifolium/Lotus* sp.), plantain (*Plantago major*) and small grasses (*Phleum/Poa annua* type) were recovered. A hawthorn stone (*Crataegus monogyna*) from layer 5062 may derive from fuel wood.

Good charred assemblages from Middle Bronze Age sites are still relatively rare from southern Britain but there is a growing body of evidence for significant developments at this time, particularly the introduction of spelt wheat at, for example, Princes Road Dartford, Kent (Pelling 2003), Black Patch, Sussex (Hinton 1982) and Brean Down, Somerset (Straker 1990). While only one glume base could be positively identified it is useful to note its presence. No emmer was positively identified, although it was identified in the Romano-British samples. There is, however, some concern about the integrity of these Bronze Age deposits, given the presence of possibly intrusive medieval material (free-threshing wheat grain and *Anthemis cotula* seeds) and recent Chenopodiaceae. Generally, the deposits are likely to derive from background scatters of grain and cereal-processing waste (chaff and weeds).

Romano-British

Samples were examined from Areas B and C. Samples from Area D produced only sparse remains. One sample was examined from ditch 809 in Area B, producing a large quantity of chaff, principally glume bases of spelt wheat (*T. spelta*) and occasional wheat (*Triticum* sp.) or indeterminate grain. The absence of barley suggests that this deposit consists of the processing waste of spelt wheat. A very limited weed assemblage consisted of occasional legumes (*Vicia/Lathyrus* and *Medicago/Trifolium/Lotus* type) and large grass seeds (*Bromus* sp. and *Lolium/Festuca* type). The bulk of the weed seeds had been removed in a previous processing episode. Samples from Area C produced more densely concentrated deposits of charred remains than Areas B and D, grain and chaff being particularly well represented, including rachis

Table 6. Charred plant remains from medieval deposits in Area D.

	Sample	202	207
	Context	48	159
	Feature	Pot fill 53	Gully 158
	Sample volume (l)	30	30
Cereal Grain			
<i>Triticum aestivum/turgidum</i> L.	Bread type/Rivet free-threshing wheat	106	14
<i>Triticum</i> sp.	Wheat grain	12	6
<i>Hordeum vulgare</i> sl.	Barley grain	15	18
<i>Avena</i> sp.	Oats	-	2
<i>Avena</i> sp.	Oats, germinated	-	1
cf. <i>Avena</i> sp.	cf. Oats	1	-
<i>Secale cereale</i> L.	Rye grain	-	3
<i>Secale cereale</i> L./ <i>Triticum</i> sp.	Rye/Wheat grain	-	3
Cerealia indet.	Indeterminate cereal sized grain	39	74
Cereal Chaff			
<i>Triticum aestivum</i> sl.	Bread type wheat rachis	1	1
<i>Triticum turgidum</i> L.	Rivet wheat rachis segment	1	-
<i>Triticum</i> cf. <i>turgidum</i> L.	cf. Rivet wheat rachis node	3	-
<i>Triticum aestivum/turgidum</i>	Bread/Rivet wheat rachis	40	13
<i>Triticum</i> sp.	Wheat rachis internode	-	3
<i>Hordeum vulgare</i> sl.	Six-row barley rachis	-	1
<i>Secale cereale</i> L.	Rye rachis	-	2
<i>Hordeum vulgare/Secale cereale</i>	Barley/Rye rachis node	-	1
Cerealia indet.	Rachis internode	-	1
Cerealia indet.	Culm node	5	4
Cerealia indet.	Detached embryo	-	1
Cereal sized	Rhizome	-	3
Other Economic Plants			
cf. <i>Vicia sativa</i> subsp. <i>Sativa</i>	cf. cultivated fodder vetch	-	1
<i>Pisum sativum</i> L.	Pea	1	-
<i>Vicia sativum/Pisum</i> sp.	Vetch/Pea	16	3
<i>Vicia/Pisum/Lathyrus</i> sp.	Vetch/Pea/Vetchling	9	4
<i>Linum usitatissimum</i> L.	Flax, capsule fragments	2	1
cf. <i>Linum usitatissimum</i> L.	cf. Flax seeds	2	-
Indet.	Nut/Fruit stone/seed frag.	-	1
Weeds/Wild			
<i>Raphanus raphanistrum</i> L.	Wild radish capsule	-	1
Caryophyllaceae type	Capsule type	-	1
<i>Chenopodium album</i> L.	Fat hen	2	11
<i>Atriplex</i> sp.	Orache	-	1
Chenopodiaceae		-	1
<i>Rumex</i> sp.	Docks	3	3
Polygonaceae indet.		-	1
<i>Galium</i> sp.		4	-
<i>Plantago major</i> L.	Plantain	-	1
<i>Vicia/Lathyrus</i> sp.	Vetch/Vetchling/Tare etc. (<4mm)	-	33
<i>Chrysanthemum segetum</i> L.	Corn Marigold	1	-
<i>Anthemis cotula</i> L.	Stinking chamomile	2	2
Asteraceae indet.	small seeded	-	1

Table 6. Charred plant remains from medieval deposits in Area D.

	Sample	202	207
	Context	48	159
	Feature	Pot fill 53	Gully 158
	Sample volume (l)	30	30
Poaceae large seeded	Grass, large seeded	17	3
<i>Bromus</i> sp.	Brome grass	1	-
<i>Lolium multiflorum/temulentum</i> type	Italian rye-grass/Darnel	5	-
<i>Eleocharis palustris</i> type	Common spikerush	-	1
Indet. weed seed		2	4
Indet. thorn		-	1

of barley and the floret bases of oats (*Avena* sp.). With the exception of a sample from ditch 5064 (context 5065), the samples were all rich in glume bases and other chaff (rachis segments) of spelt wheat (*Triticum spelta*), interpreted as cereal-processing waste. A single glume base of emmer wheat (*Triticum dicoccum*) suggests that this second hulled wheat may also have been cultivated, although it could merely represent a weed of the spelt crop. Weed seeds and cereal grain were present in similar proportions. A broad, mixed arable economy is suggested by the presence of beans (*Vicia faba*), indeterminate pulses and flax seeds and capsule fragments (*Linum usitatissimum*).

The range of species found is entirely consistent with the Romano-British period, suggesting a mixed arable economy, while the preservation of the chaff including rarely preserved fragile fragments (e.g. oat florets) is likely to reflect the large quantities of chaff entering the site and the increased chance of preservation. The presence of spelt wheat rachis segments may indicate the presence of whole ears of spelt wheat on the site, or may simply be the result of chance survival. In contrast, the number of weed seeds was relatively low, more indicative of a crop which had been previously cleaned of weeds, perhaps prior to storage. Such two-stage processing has been suggested to be related to labour availability at harvest time (Stevens 2003), in which crops are stored as cleaned spikelets, the glumes being removed in a final stage prior to use/milling etc. The deposits also provide some evidence for broader arable practices during the Romano-British period with the presence of flax seeds and capsule fragments, as well as pulses.

Medieval

Two deposits of medieval date were examined from Area D, from a pot (pit 53) and a gully (Group 6030). Both produced quite large numbers of cereal grain dominated by short, rounded grain of free-threshing wheat (*Triticum aestivum/turgidum* type) with some hulled barley (*Hordeum vulgare*), oats (*Avena* sp.) and rye (*Secale cereale*). This shift from hulled to free-threshing wheat reflects a movement which occurred across the country in the post-Roman period and is likely to be associated with the introduction of new farming traditions with incoming populations. Chaff was present in both samples, with relatively frequent rachis segments in the placed pot deposit. Occasional rachis segments of barley and rye, as well as culm nodes, are likely to represent contaminants of the grain. The presence of well-preserved rachis enabled the identification of both hexaploid bread

type wheat (*Triticum aestivum sl*) and tetraploid rivet type wheat (*T. turgidum*). Historical records for the cultivation of rivet wheat in Britain date from 1580 onwards (Percival 1948, 92), and archaeological records suggest that it was introduced around the time of the Norman Conquest (Moffett 1991; Campbell 1994). The two wheat types have quite different qualities. Bread-type wheats produce strong flour with a high gluten content suitable for bread making, and rivet wheat a weak, mealy flour better suited for biscuits, porridge or gruel, but with a long straw useful for thatch, malting mats and so on (Percival 1921, 242). It is particularly useful in that it is highly resistant to rust while many bread wheat varieties are particularly susceptible (Percival 1921). Cultivation of both types would therefore reduce the risk of crop failure.

As with the earlier periods, a mixed arable economy is suggested. Pulses were fairly well represented, particularly from the pot fill. At least two pulse species are represented: pea (*Pisum sativum*) and possible cultivated fodder vetch (*Vicia sativa* subsp. *sativa*). Fodder vetch is another relatively late introduction to Britain, present in Late Saxon contexts at West Cotton and Raunds, Northamptonshire (Campbell 1994), but is generally not recorded until the early medieval period. Flax also continued to be cultivated and is represented by occasional seeds and capsule fragments.

A fairly limited range of weed species is represented, although the number of seeds was relatively high. Particularly numerous were seeds of Chenopodiaceae, indeterminate Poaceae and vetches, tares etc (*Vicia/Lathyrus* spp.). The vetches may include weedy forms of the cultivated pulses. Stinking chamomile (*Anthemis cotula*) and corn marigold (*Chrysanthemum segetum*), both classic corn-field weeds of the medieval period, were present in small numbers. The majority of the remaining species have catholic habitat requirements, being common on disturbed ground including arable fields, such as wild radish (*Raphanus raphanistrum*), docks (*Rumex* sp.) and knotgrass (*Polygonum aviculare*). Some hint at the cultivation of wet ground is suggested by a seed of spikerush (*Eleocharis palustris*). The presence of numerous weed seeds and chaff items in both the medieval samples suggests that some sort of cereal by-product is present in the samples. The free-threshing nature of medieval cereals is such that chaff is rarely represented in medieval sites both because it survives burning less well than grain and because it is less likely to come into contact with fire. When it is well represented it is likely to be related to the chance burning of the straw or chaff brought into the site for use as thatch, fodder and so on, or as fuel, either where specific burning

qualities are required, as in a malting oven, or where other fuel is lacking (e.g. Moffett 1994).

CHARCOAL by Ruth Pelling

The assessment demonstrated that while charcoal was generally poorly represented, two Middle Bronze Age deposits (pit 859, context 858 and layer/dump, context 5080) did provide the potential for investigation of the exploitation and use of local resources and fuel wood (WA 2008). All charcoal fragments greater than 2mm in size were extracted from the flots and residues. Up to 50 fragments of charcoal were selected from each sample for identification (35 fragments from layer 5760). These fragments were prepared for identification according to the standard methods (Leney and Casteel 1975; Gale and Cutler 2000) and examined under

bi-focal epi-illuminated microscopy at magnifications of $\times 50$, $\times 100$ and $\times 400$. Identification follows Schweingruber (1990) while nomenclature is according to Stace (1997).

The detailed results are available in the archive. Both samples produced mixed charcoal assemblages in which *Quercus* sp. (oak) was most commonly represented. In addition, fragments of *Prunus spinosa* (blackthorn) and Pomoideae (apple/pear/hawthorn, etc.) charcoal were identified. Oak, blackthorn and pomoideous wood are the taxa most commonly encountered on settlement sites, and appear to have been used widely as fuel for general domestic and other purposes. It is likely that this reflects the locally available vegetation rather than selective choices, possibly with a preference for oak. The range of taxa is indicative of mixed, possibly scrubby, vegetation.

DISCUSSION

A few finds of Mesolithic, Neolithic and Early Bronze Age date indicate low-level exploitation of the area and add to the growing body of evidence for the use of the Sussex coastal plain (Harding 2006, 32–3; Fitzpatrick *et al.* 2008, 89–90, fig. 36, 135–6, fig. 60; Garwood 2008; Pitts 1980; Priestly-Bell 2006). The possibility of more extensive Neolithic occupation (the possible Neolithic ditch found during the evaluation) cannot be ruled out but, as this area was not re-examined during the subsequent excavation, any further discussion is necessarily limited.

By the Middle Bronze Age there is greater evidence for occupation, possibly settlement, and division of the landscape. The evidence is limited, the focus of the activity apparently located away from the excavated areas. However, the remains can be compared to other sites on the Sussex coastal plain (e.g. Yates 2007, 53, fig. 6.5). Domestic rubbish from the site indicates a mixed economy of cereals, with a few other crops and collected wild foods (bean, flax and hazelnuts), and the usual domesticates were represented. The later Bronze Age flint assemblage provides evidence for activities such as knapping, hide preparation and other processing tasks. The axes raise the possibility of a formal deposit, but the evidence is not entirely clear and may reflect disturbance of an earlier feature. The ceramic assemblage is typically domestic, but there are hints at more formalised deposition with the placing of complete or near-complete vessels, including one with burnt and worked flint and stone. These deposits may have had some special significance, and this practice

can be paralleled at a number of sites including similar isolated and non-funerary contexts such as Langstone Harbour (Allen and Gardiner 2000, 157), Twyford Down, Hampshire (Area B) (Walker and Farwell 2000, 21–2, and Claypit Lane, West Sussex (Chadwick 2006, 18–20).

Early Iron Age activity was limited, perhaps indicating a hiatus in occupation. In the immediate locality Late Iron Age activity was identified at the nearby HRI site (Lovell 2002) and other Iron Age activity is known (Bennell 2002).

The rectangular field system and trackway established during the Romano-British period was associated with crop processing, especially spelt wheat. The quantity of material recovered suggests that this was well organised and it is possible that these fields formed part of the wider estate of the Angmering villa, together with the adjacent pottery production site at the HRI (Lovell 2002) and a probable second century watermill to the northeast. The paucity of features other than the field ditches suggests that any settlement lay at some distance. The small finds assemblage at the Nurseries is indicative of low-status settlement, with little imported pottery. Locally produced wares from a variety of sources including Pulborough, Rowlands Castle, Hardham and Wiggonholt were identified. Similar reduced wares were produced at the HRI site (Laidlaw 2002); a possible waster from the Nurseries may link these two sites.

There was slight evidence for Saxon activity on the site, perhaps hinting at some occupation in the vicinity. During the evaluation 12–13th century pottery was found (OAU 2005), and the present excavations produced some 10th and 12th century wares. However, the bulk of the evidence dates

to the 13th and 14th centuries, when a possible ditch system and trackway were constructed which were maintained over a number of years. Medieval activity on the site may have originally been more widespread, as indicated by features in Areas A and E as well as isolated features and finds identified during the evaluation (OAU 2005). The partial nature of evidence hampers interpretation, but it would appear that 13th–14th century activity was concentrated around the trackway. Here a number of pits and other features possibly hint at occupation. Pottery from local production sites at Binsted and Chichester was used at the site, and environmental evidence indicates mixed arable farming, including cultivation of pulses and flax. It is possible that a small settlement alongside the trackway existed, the focus of which was located away from the excavated areas.

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REFERENCES

- Allen, M. J.** and **Gardiner, J.** 2000. *Our changing coast. A survey of the intertidal archaeology of Langstone Harbour*. London: Council for British Archaeology Research (hereafter BAR) Report **124**.
- Barton, K. J.** 1979. *Medieval Sussex pottery*. Chichester: Phillimore.
- Bedwin, O.** 1975. The excavation of the church of St Nicholas, Angmering, 1974, *Sussex Archaeological Collections* (hereafter SAC) **113**, 16–34.
- Bennell, M.** 2002. *An archaeological desk-based assessment and walkover survey of land to the west of Watermead, Littlehampton*. Unpublished Archaeology South-East report.
- Bradley, R.** 2002. *The past in prehistoric societies*. London and New York: Routledge.
- Bradley, R.** and **Ellison, A.** 1975. *Rams Hill: A Bronze Age defended enclosure and its landscape*. Oxford: BAR Rep. Brit. Ser. **19**.
- British Geological Survey, England and Wales.** 1996 *Sheet 317/332*.
- Campbell, B. M. S.** 1988. The diffusion of vetches in Medieval England, *Economic History Review* (2nd series) **41**, 193–208.
- Campbell, G.** 1994. The preliminary archaeobotanical results from Anglo-Saxon West Cotton and Raunds, in J. Rackham (ed.), *Environment and economy in Anglo-Saxon England*. CBA Research Report **89**, 65–82.
- CgMs.** 2005. *Land at Eden Park (former Toddington Nurseries) Littlehampton, West Sussex*. Written Scheme of Investigation for Archaeological Excavation DH/KB/6429.
- Chadwick, A.** 2006. Bronze Age burials and settlement and an Anglo-Saxon settlement at Claypit Lane, Westhampnett, West Sussex, SAC **144**, 7–50.
- Clough, T. H. McK.** and **Cummins, W. A.** (eds) 1988. *Stone axe studies. Vol. 2: The petrology of prehistoric stone implements from the British Isles*. London: CBA Research Report **67**.
- Cramp, K.** and **Leivers, M.** 2010. The flint [CD Rom report 4], in *Landscape evolution in the Middle Thames Valley, Heathrow Terminal 5 excavations Vol. 2*. 1–7. Oxford and Salisbury: Framework Archaeology.
- Cunliffe, B.** 1991. *Iron Age communities in Britain*, 3rd edn. London and New York: Routledge.
- Dickinson, B.** 1997. British samian, in A. P. Fitzpatrick and A. Powell, *Archaeological excavations on the route of the A27 Westhampnett Bypass, West Sussex, 1992. Vol. 2: The cemeteries*. Salisbury: Wessex Archaeol. Rep. **12**, 259–60.
- Driesch, A. von den.** 1976. A guide to the measurement of animal bones from archaeological sites, *Peabody Museum Bulletin* **1**. Cambridge USA: Harvard University.
- Evans, K. J.** 1974. Excavations on a Romano-British site, Wiggonholt 1964, SAC **112**, 97–151.
- Field, D.** and **Woolley, A. R.** 1984. Neolithic and Bronze Age ground stone implements from Surrey: morphology, petrology and distribution, *Surrey Archaeological Collections* **75**, 85–109.
- Fitzpatrick, A. P., Powell, A. B.** and **Allen, M. J.** 2008. *Archaeological excavations on the route of the A27 Westhampnett Bypass West Sussex, 1992. Vol. 1: Late Upper Palaeolithic–Anglo-Saxon*. Wessex Archaeology Report **21**.
- Ford, S., Bradley, R., Hawkes, J.** and **Fisher, P.** 1984. Flint-working in the metal age, *Oxford Journal of Archaeology* **3** (1), 155–74.
- Gale, R.** and **Cutler, D.** 2000 *Plants in archaeology*. Westbury and Royal Botanic Gardens Kew.
- Gardiner, M.** 1990. An Anglo-Saxon and medieval settlement at Botolphs, Bramber, West Sussex, SAC **147**, 216–75.
- — 1993. The excavation of a late Anglo-Saxon settlement at Market Field, Steyning, 1988–89, SAC **131**, 21–67.
- — 1997. ‘Pottery’ in M. Gardiner and C. Greatorex, *Archaeological excavations in Steyning, 1992–5*, SAC **135**, 161–6.
- Garwood, P.** 2008. Landscapes, monuments and social

- practices in the late 4th and 3rd millennia BC: a survey, South East Research Framework Resource assessment seminar. http://www.kent.gov.uk/leisure_and_culture/heritage/south_east_research_framework/serf_seminar_papers.aspx.
- Gilkes, O. J.** 1999. The bathhouse of Angmering Roman villa, *SAC* **137**, 59–69.
- Grant, A.** 1982. The use of tooth wear as a guide to the age of domestic ungulates, in B. Wilson, C. Grigson and S. Payne (eds), *Ageing and sexing animal bones from archaeological sites*. BAR Bri. Ser. **109**. Oxford: Archaeopress.
- Guido, M.** 1978. *The glass beads of the Prehistoric and Roman periods in Britain and Ireland*. London: Society of Antiquaries Res. Rep. **35**.
- Habermehl, K.-H.** 1975. *Die Altersbestimmung bei Haus- und Labortieren*, 2nd edn. Berlin/Hamburg: Parey.
- Hamilton, S.** 1987. The Late Bronze Age pottery, in D. Rudling, The excavation of a Late Bronze Age site at Yapton, West Sussex, *SAC* **125**, 53–63.
- — 2002. The Mile Oak pottery assemblage – its stratigraphic context, forms, fabrics, chronology and regional significance, in D. Rudling, *Downland settlement and land use: The archaeology of the Brighton Bypass*. Archtype Publications Ltd/English Heritage.
- Harding, P.** 2006. Flint, in Chadwick 2006, 31–3.
- Hinton, P.** 1982. Carbonised seeds, in P. Drewett, Later Bronze Age downland economy and excavations at Black Patch, East Sussex, *Proceedings of the Prehistoric Society* **48**, 321–400.
- Jones, G.** 2006. Tooth eruption and wear observed in live sheep from Butser Hill, the Cotswold Farm Park and Five Farms in the Pentland Hills, UK, in D. Ruscillo (ed.), *Recent advances in ageing and sexing animal bones*. Oxford: Oxbow Books.
- Laidlaw, M.** 2002. ‘The pottery’ in J. Lovell, An early Roman pottery production site at Horticultural Research International, Littlehampton, *SAC* **140**, 21–40.
- Lauwerier, R. C. G. M.** 1988. Animals in Roman times in the Dutch Eastern River area, *Nederlandse Oudheden* **12**. Amersfoort: ROB.
- Lezey, L. and Casteel, R. W.** 1975. Simplified procedure for examining charcoal specimens for identification, *Journal of Archaeological Science* **2**, 153–9.
- Levine, M. A.** 1982. The use of crown height measurements and eruption-wear sequences to age horse teeth, in B. Wilson, C. Grigson and S. Payne (eds), *Ageing and sexing animal bones from archaeological sites*, BAR Brit. Ser. **109**, 223–50. Oxford: Archaeopress.
- Lovell, J.** 2002. An early Roman pottery production site at Horticultural Research International, Littlehampton, *SAC* **140**, 21–40.
- Mephram, L.** 2001. ‘Pottery’ in J. Lovell, Excavations on a medieval site at Little High Street, Worthing, West Sussex, 1997, *SAC* **139**, 137–41.
- Moffett, L.** 1991. The archaeobotanical evidence for tetraploid wheat in Britain, in E. Hajnlova (ed.), *Palaeoethnobotany and Archaeology, Acta Interdisciplinaria Archaeologica VII*, Nitre, 233–44.
- — 1994. Charred cereals from some ovens/kilns in late Saxon Stafford and the botanical evidence for the pre-burh economy, in J. Rackham (ed.), *Environment and economy in Anglo-Saxon England*, 55–64. Council for British Archaeology Report 89. York: Council for British Archaeology.
- Morris, E.** 1994. The analysis of pottery, Wessex Archaeology Guideline No. **4**, unpublished.
- OAU** 2005. Toddington Nurseries Littlehampton, West Sussex. Unpublished Archaeological Evaluation report.
- Prehistoric Ceramics Research Group.** 1997. *The study of later prehistoric pottery: general policies and guidelines for analysis and publication*, Occasional Papers Nos **1** and **2**.
- Pelling, R.** 2003. Charred plant remains, in P. Hutchings, Ritual and riverside settlement: a multi-period site at Princes Road, Dartford, *Archaeologia Cantiana* **123**, 41–79.
- Percival, J.** 1921. *The wheat plant: A monograph*. London: Duckworth.
- — 1948. *Wheat in Great Britain*. London: Duckworth (2nd edn).
- Pitts, M.** 1980. A gazetteer of Mesolithic finds on the West Sussex coastal plain, *SAC* **118**, 153–62.
- Priestly-Bell, G.** 2006. Excavation of a Mesolithic occupation site and a Saxon building to the rear of Upper Bognor Road, Bognor Regis, West Sussex, *SAC* **144**, 51–67.
- Rudling, D. and Gilkes, O.** 2000. Important archaeological discoveries made during the construction of the Rustington Bypass, 1990, *SAC* **138**, 15–28.
- Schuster, T.** 2001. *Bösselkatrien heet mien Swien*. Leer: Schuster.
- Schweingruber, F. H.** 1990. *Microscopic wood anatomy*, 3rd edn. Birmensdorf: Swiss Federal Institute for Forest, Snow and Landscape Research.
- Scott, L.** 1938. The Roman villa at Angmering, *SAC* **79**, 3–45.
- Serjeantson, D.** 1996. The animal bones, in S. Needham and T. Spence, *Refuse and disposal at Area 16 East, Runnymede*, Runnymede Bridge Research Excavations, Volume **2** 194–223. London: British Museum Press.
- Stace, C.** 1997. *New flora of the British Isles*, 2nd edn. Cambridge: Cambridge University Press.
- Stevens, C.** 2003. An investigation of agricultural consumption and production models for prehistoric and Roman Britain, *Environmental Archaeology* **8**.1, 61–76.
- Stone, J. F. S.** 1936. An enclosure on Boscombe Down East, *Wiltshire Archaeology Magazine* **47**, 466–89.
- — 1941. The Deverel Rimbury settlement on Thorney Down, Winterbourne Gunner, South Wiltshire, *Proceedings of the Prehistoric Society* **7**, 114–33.
- Straker, V.** 1990. Charred plant macrofossils, in M. Bell (ed.), *Brean Down excavations 1983–1987*, 211–19. London: English Heritage Monograph **15**.
- Wahl, J.** 1981. Beobachtungen zur Verbrennung menschlicher Leichname: über Vergleichbarkeit moderner Kremationen mit prähistorischen Leichenbränden, *Archäologisches Korrespondenzblatt* **11**, 271–9.
- Walker, K. E. and Farwell, D. E.** 2000. *Twyford Down, Hampshire archaeological investigations on the M3 motorway from Bar End to Compoton, 1990–93*. Hampshire Field Club Monograph No. **9**.
- Wessex Archaeology** 2008. Land at Eden Park (Former Toddington Nurseries) Littlehampton, West Sussex, Unpublished client report ref 61800.03.
- Yates, D. T.** 2007. *Land, power and prestige. Bronze Age field systems in southern England*. Oxford: Oxbow Books.
- Young, R. and Humphrey, J.** 1999. Flint use in England after the Bronze Age: time for an evaluation? *Proceedings of the Prehistoric Society* **65**, 231–42.

